



DEPARTMENT OF THE INTERIOR

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Working behind a screen of anonymity, women scientists among the Department of the Interior's 10,000 women employees daily are making important contributions to victory while at the same time turning up new scientific discoveries that will benefit the country during the post-war period, it was indicated today in reports to Secretary Harold L. Ickes from the Department's various bureaus and offices.

As the number of women replacing men in the armed services has steadily increased, their assignments have been to progressively more important jobs, with extremely creditable results, these reports indicate. Women have added lustre to the Department's war activities and to the reputation of their sex in a wide variety of scientific fields, including biology, geology, chemistry and even engineering.

When the Army needed expert advice on the kinds of fur garments that could best stand the gaff of arctic climates, it was a woman fur scientist of the Fish and Wildlife Service who furnished it. When the principal shad-producing states participated in a project designed to increase production to relieve the meat shortage, it was a woman aquatic biologist who was appointed to direct these researches. A woman food technologist also has gone far in the solution of the food problem by evolving recipes for cooking wild animals hitherto generally considered inedible, such as muskrats, beavers, raccoons and opossums.

As examples of scientific accomplishments by dozens of women in Washington and scores throughout the country, the activities of five such feminine sages were singled out for description in today's reports as illustrative but not inclusive.

They include:

Dr. Thora Hardy, microanalyst of the Fish and Wildlife Service at the Wildlife Research Refuge at Patuxent, Md. Although Dr. Hardy has been in the government service since 1935, her present job was created in 1938 because of her outstanding ability in the study of furs. A graduate of Barnard College, Columbia University, with an A.B. degree in 1925, she took an M.S. degree in 1930 and a Ph.D. in 1932 at the University of Chicago.

Early in the war she was assigned to find the answers to many questions posed by the Army as to the best type of felt shoes and feather sleeping bags for use in the Aleutians and other frigid climates. As a result, specifications for great quantities of such equipment were drawn according to her specifications. Many a GI can thank Dr. Hardy for being able to escape frostbite.

The purpose of her fur studies at present is to improve and set up standards in the quality of furs on the North American market. These standards would be established both for wild animals and those grown on ranches. Her findings are studied and respected by those engaged extensively in trapping, as well as by managers of fur ranches and buyers for large establishments.

Dr. Hardy, with the aid of laboratory assistants, is constantly engaged in a great variety of experiments. In cooperation with the Fish and Wildlife Service's fur farm at Saratoga Springs, N. Y., and with private concerns, she makes extensive studies concerning the best diets and breeding procedures to produce furs of the finest possible quality. She cuts little squares out of fur samples and subjects them to the microscope to count the number of guard hairs and under-fur per square inch, as well as to determine their quality that would not be disclosed to the naked eye.

Studies of furs under all sorts of conditions enable Dr. Hardy to furnish expert advice as to the best time, just before moulting, to kill the animals to produce the best fur. Although she studies many kinds of furs, she has concentrated principally upon silver fox, Persian lamb, Karakul sheep and Angora rabbits.

"There are silver foxes and silver foxes", said Dr. Hardy. "Their quality varies as widely as the weather in April. To avoid being stuck one must either be an expert or know the reliability of one's dealer."

Dr. Hardy is giving particular attention to domestic production of furs which formerly came almost exclusively from foreign countries. This applies particularly to Persian lamb, Karakul sheep (which originated in Asiatic Russia) and Angora rabbits. She has an experimental hutch of these fluffy bunnies, whose fur is so much in demand for fine, fuzzy knitted garments. On the average, she estimates, one Angora rabbit will produce about 12 ounces of fur per year, at prices up to \$12 per pound. One attendant can take care of about 1,000 rabbits. Since their feed costs about one dollar a year for each rabbit, Dr. Hardy concludes that Angora rabbit farming can be a fairly profitable business.

Miss Louella Cable, aquatic biologist of the Fish and Wildlife Services at College Park, Md., is devoting her scientific talents to directing a special project, in cooperation with the principal shad-producing states, to find practical methods of restoring the sadly depleted shad fisheries of the Atlantic Coast as a means of relieving wartime food shortages.

Miss Cable, who lives at 4810 Fox St., Daniels Park, Md., is a native of Chamberlain, S. D. She attended the University of South Dakota at Vermillion, where she received her A.B. degree in 1926 and her M.A. in 1927. She has been in the government service ever since.

Although her project is still too young to provide exhaustive information about shad, she has found out many things that the shad industry considers extremely valuable. She has applied, for instance, the method of determining how old a shad is by its scales -- or at least how many times it has spawned. A new scar is added to each scale every time a roe shad spawns,

Miss Cable has also found that the shad, with very rare exceptions, always return to spawn in the same stream in which it was spawned. "To all intents and purposes", she says, "there is a separate race of shad for each stream". That is determined by the number of gill rakers and other characteristics that she has learned to recognize.

Miss Cable can also tell whether a shad comes from a southern or a northern stream. Shad from southern streams wear their posterior scutes in a different position and on a more insecure base. "That must be their southern accent", she says.

As soon as shad enter a stream to spawn they stop eating, and continue to fast until they have finished spawning and have returned to salt water. This fasting period, Miss Cable has concluded, is what produces the age-scars on their scales. She has in her files at College Park thousands of scale samples which she studies through a microscope. She doesn't actually keep the scales in the files; she makes impressions of them on specially-designed translucent plastic plates. She has her own instrument for preparing these plates, for microscopic study. She places a series of scales on the plates, which are softened to make the permanent impressions through the application of heat and thirteen tons of pressure.

Miss Cable has developed her own system of tagging to help her to follow the life history of shad. During each shad season large numbers of shad are purchased alive from fishermen, tagged and put back into the water. When the fish is caught again, it is hoped that whoever finds the tag will report to the Fish and Wildlife Service the place where it was caught and other pertinent information. The tag most commonly used is a small piece of enamel about one-quarter of an inch long, which is inserted through a slit in the shad's belly. Each tag is numbered and a corresponding record is kept of when and where the fish was released. Comparatively few people have learned to look for the tags, and it is assumed that many are discarded when the fish are prepared for cooking. However, more and more tags are being returned, and still more will follow as more people learn that the government pays one dollar for each returned tag, for finding and returning the lucky tag will help pay for a delectable meal for shad.

Mrs. Lucile Stickel, junior biologist of the Fish and Wildlife Service's Patuxent Research Refuge, Maryland, is expected to turn up valuable new facts about DDT powder, the wonder drug that has been used so effectively in controlling typhus and other epidemics in the armed forces. Mrs. Stickel is engaged in extensive experiments to determine the effect on beneficial wild life of DDT - chemically known as 2,2-Bis (p-chlorophenyl) 1,1,1-trichloroethane. It is also called Dichloro-diphenyl-trichlorethane.

DDT powder is one of the most deadly poisons for destroying all kinds of vermin and insects, but it is feared that if used too freely it may also destroy birds, mammals and other wildlife that feed on these insects or on vegetation upon which the poison is sprayed. It is Mrs. Stickel's job to find out just how extensively it is safe to use the poison.

She has already found out that it has an extremely toxic effect on fish and other coldblooded aquatic life when the poison is applied to surfaces of stagnant water to kill mosquitoes and other insects that breed in such habitats.

Laboratory experiments with warm-blooded animals so far have shown that such wildlife has considerably greater tolerance of the poison, but the evidence is not conclusive. She is planning to spray DDT powder over several acres of the research refuge, by means of an airplane, and study its effect on the wildlife of the area, as well as on its vegetation. Complete and conclusive results of this experiment will not be known for several months.

Mrs. Stickel, who lives with her work on the Patuxent refuge, is a native of Michigan. She took her M.S. degree at the University of Michigan in 1941 and has three years of study toward her Ph.D.

Miss May Thacher Cooke, assistant biologist at the Patuxent Research Refuge, has devoted most of her life to the study of the habits and customs of migratory birds, joining the government service in 1916. She lives at 1400 Fairmont St., Washington, D. C., and is doing a job that returned veterans interested in outdoor sports will have a reason to applaud.

Miss Cooke has probably the most complete record of migratory birds in existence. She is proud of her files containing about 2,000,000 cards covering important information gathered over the years. Her primary object is to gather and keep complete information on where birds breed, where they spend the winter and by what route they come and go in following the seasons.

Miss Cooke obtains her information by banding birds and cooperating with individual ornithologists and organizations, in using specially designed bands. About 4,500,000 migratory birds have been banded since the studies began in 1920, and to date some 300,000 bands have been returned from about 1,500 cooperators. Sometimes she receives as many as two hundred letters a day from persons returning bands from birds, together with information as to the circumstances under which the birds were caught.

Flight records, nesting and other habits of birds, in addition to being kept in card files, are plotted on a series of maps -- usually a different map for each species of bird. Miss Cooke has received reports about birds that have gone as far south as Uruguay. One of the proudest moments of her life was when she recently received bands showing that the winter quarters of the chimney swift were in Peru. That was the first time any record had ever been obtained indicating a solution to the age-old mystery as to where chimney swifts go in winter.

Miss Cooke's life-long interest in birds may be said to be hereditary. Her father, Wells W. Cooke, was one of the first Americans to begin studying migratory birds, back in the 1870's.

Mrs. Rose G. Kerr, food technologist of the Fish and Wildlife Service at College Park, Md., is doing extensive research in how to prepare and cook many kinds of wild game that have usually been considered inedible. Besides helping to solve the wartime meat shortage, Mrs. Kerr has evolved many toothsome recipes for cooking such animals as muskrat, beaver and raccoon.

Her knowledge of food was considered so valuable that her services were loaned to the Army for a year to arrange the most nutritious and economical menus possible in Army training centers.

Mrs. Kerr, who now lives at 1705 Kilbourne Place, N.W., Washington, D. C. is a native of Lewiston, Idaho. She was graduated from the University of Idaho at Moscow, Idaho, in 1936.

Many of her recipes have been published and are in ever-increasing demand. She never publishes a recipe until it has been thoroughly tested and found to be both practical and appetizing. Among her recipes are:

Roast muskrat with raisin nut stuffing, roast muskrat with onion dressing, fried muskrat, barbecued muskrat, muskrat potroast, roast beaver, boiled beaver

dinner, beaver meat pie, roast raccoon with raisin nut stuffing, roast raccoon with onion dressing; spiced roast raccoon, braised raccoon with tomato sauce, raccoon pot roast with sweet potatoes, raccoon cakes, roast rabbit with sage stuffing, roast stuffed rabbit with cranberry glaze, barbecued rabbit, oven fried rabbit, rabbit a la king, and many others.

Regarding the work of women scientists in the Department of the Interior Secretary Ickes paid high tribute to their devotion to the public interest and their tenacity and intelligence in the tasks to which they are assigned.

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